

# इंटरनेट

# मानक

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Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 1107 (1986): Aerated water glass bottles, crown finish type [CHD 10: Glassware]



“ज्ञान से एक नये भारत का निर्माण”

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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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## Indian Standard

REAFFIRMED

2002

SPECIFICATION FOR  
AERATED WATER GLASS BOTTLES CROWN FINISH TYPE

( Second Revision )

- 1. Scope** — Prescribes the requirements for aerated water glass bottles of crown finish type.
- 2. Terminology** — For the purpose of this standard, the definitions as given in IS : 1382-1981 'Glossary of terms relating to glass and glass ware (first revision)' and IS : 6654-1982 'Glossary of terms relating to glass containers (first revision)' shall apply.
- 3. Nominal Capacity** — The aerated water glass bottles shall be of 200, 300 and 500 ml nominal capacity.
- 4. Dimensions**
- 4.1** The dimensions of bottles shall be as given in Fig. 1.
- 5. Material** — The bottles shall be made of colourless or coloured soda-lime-silica glass.
- 6. Capacity and Mass** — The nominal capacity, capacity at filling level, brimful capacity and the mass of the bottles shall be as follows:

Nominal Capacity ml	Capacity at Filling Level ml	Brimful Capacity ml	Mass g
200	200 ± 6	212 ± 6	380 ± 6
300	300 ± 6	317 ± 6	420 ± 15
500	500 ± 7	517 ± 7	510 ± 15

- 7. Neck Finish** — The neck finish of the bottles shall conform to IS : 7511 (Part 7) - 1986 'Dimensions for neck finishes: Part 7 Crown finish'.

**8. General Requirements**

**8.1** The bottles shall as far as possible, be free from cords, blisters, seeds, bubbles and loading marks.

**8.2** The shape of the bottles shall be cylindrical without any sharp corners.

**8.3** The finish of the bottles shall be as specified and shall not show heavy neck ring seam marking. The seaming surface of the finish shall be smooth without any cracks and free from split finish, chipped surface, seams and other protrusions.

**8.4 Fire Finishing** — It is recommended that the lip of crown cork finish, may be fire finished to remove all sharp edges from the inside of the edge as well as top surface of the neck.

**8.5 Annealing** — The bottles shall be well annealed and shall not contain strains more than that shown by standard strain disc No. 4.

**8.6 Limit of Alkalinity** — The glass of the bottles shall conform to Type 4 of the glass when tested and graded according to the method given in 3 of IS : 2303-1963 'Method of grading glass for alkalinity'.

**9. Tests**

**9.1 Verticality Test** — A vertical line through the centre of the circle formed by the inside neck opening shall pass through the centre of the circle described by the widest diameter at the bottom of the bottle. The variation in verticality when tested according to the method given in Appendix A shall not exceed the values given below :

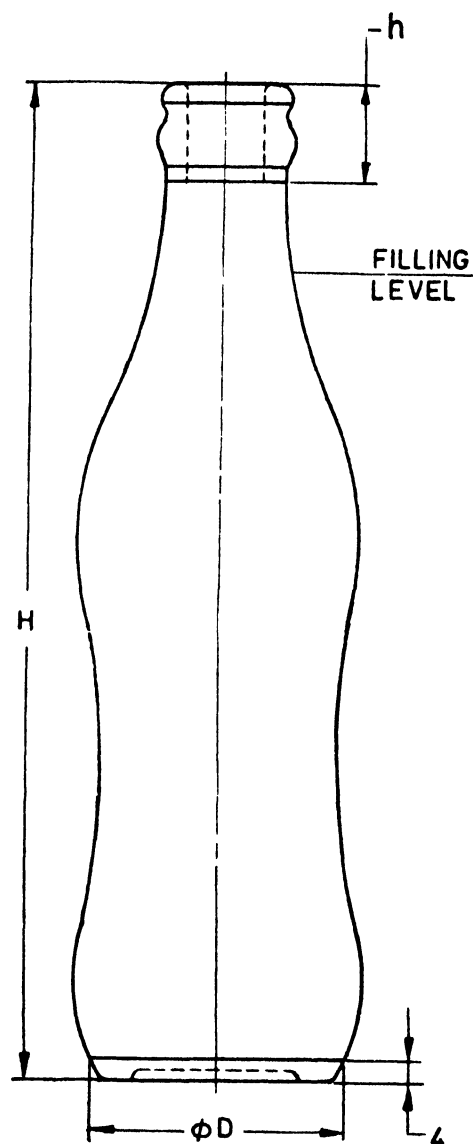
Nominal Capacity ml	Variation in Verticality
200	2.4
300	2.8
500	3.1

Adopted 26 November 1986

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BUREAU OF INDIAN STANDARDS  
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NEW DELHI 110002



Nominal Capacity ml	$H$ $\pm 1.5$	$h$	$D$ $\pm 1.0$
200	205	20	58.0
300	245	20	59.5
500	282	20	68.0

All dimensions in millimetres.

FIG. 1 DIMENSIONS OF BOTTLES

**9.2 Hydrostatic Pressure Test** — Bottles shall withstand a pressure of  $150 \text{ N/cm}^2$  ( $\approx 15 \text{ kg/cm}^2$ ) when applied for a duration of  $1 \text{ minute} \pm 2 \text{ seconds}$ .

**Note** — One of the test methods for conducting hydrostatic pressure test is given in Appendix B.

**9.3 Thermal Shock Test** — The bottles shall pass the thermal shock test when tested according to IS : 11930-1986 'Methods of thermal shock test for glass containers'. The temperature differential ( $t_1 - t_2$ ) for the test shall be  $42^\circ\text{C}$ .

## 10. Packing and Marking

10.1 The bottles shall be packed as agreed to between the purchaser and the vendor.

10.2 Each bottle shall be permanently and legibly marked with the marker's name or his registered trade-mark.

10.3 *Certification Marking* — Details available with the Bureau of Indian Standards.

## APPENDIX A

( Clause 9.1 )

### TEST FOR VERTICALITY OF BOTTLES

#### A-0. General

A-0.1 This test determines the combined effect of the offset of mouth with the body and mouth being at an angle of the body.

#### A-1. Assembly

A-1.1 Assembly for the determination of verticality shall be as shown in Fig. 2.

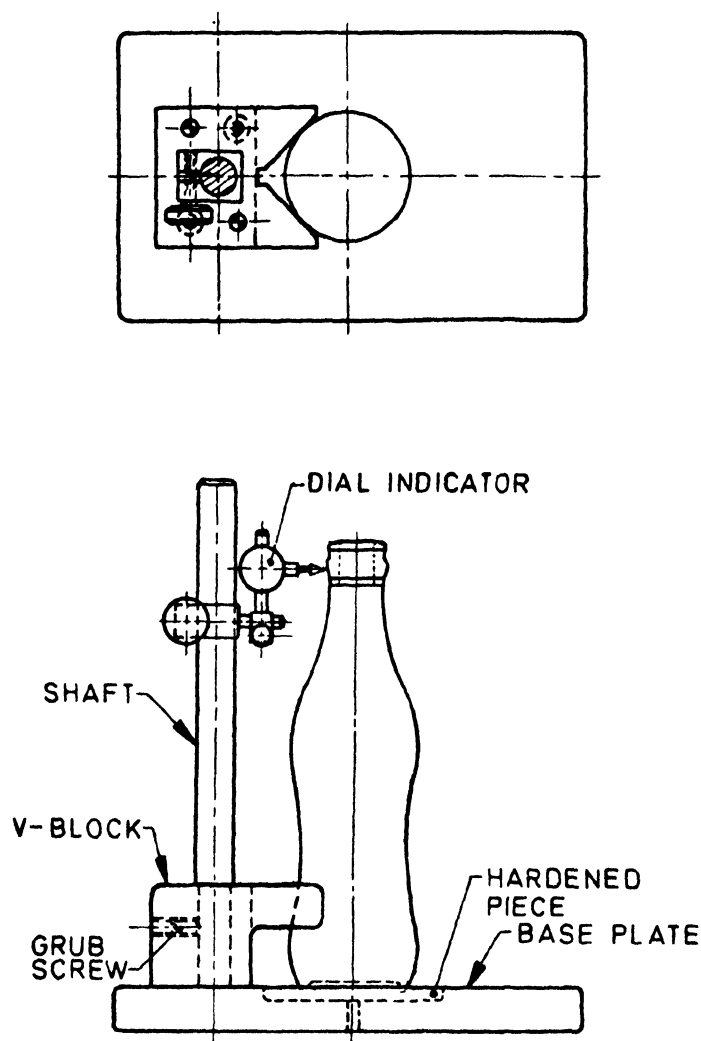


FIG. 2 ASSEMBLY FOR TESTING VERTICALITY

**A-2. Procedure**

**A-2.1** Fill the bottle with water in order to give it more stability and place it on its base on the flat plate having a pillar bolted to it at right angles. Adjust the 'V' block mounted on the pillar in such a manner that it is in contact with the outer diameter of the bottle at about the middle. Adjust the dial indicator fitted to the pillar so that its measuring point comes in contact with the outer edge of the neck of the bottle. Rotate the bottle, keeping the body always in contact with the 'V' block. Note down the maximum deflection on the indicator.

**A-2.1.1** Half of the total deflection shown by an indicator shall be the variation in verticality.

**A P P E N D I X   B**

*( Clause 9.2 )*

**HYDROSTATIC PRESSURE TEST**

**B-1. Apparatus**

**B-1.1** The apparatus shall embody the following principles.

**B-1.1.1** The bottle to be tested shall be held by a split collar so designed that the bottle is not clamped but is suspended from the bead of the finish.

**B-1.1.2** A seal shall be provided which will be watertight at the pressure to be applied.

**B-1.1.3** An automatically controlled timing mechanism shall be built into the machine so that the bottle is under pressure for 1 minute  $\pm$  2 seconds.

**B-1.1.4** The apparatus shall be so designed that the weight is applied directly by gravity without any intermediate cams or levers.

**B-2. Procedure**

**B-2.1** Fill the bottle with water at room temperature. Hold it by the split collar and then seal. Apply a pressure of 150 N/cm<sup>2</sup> ( $\approx$  15 kg/cm<sup>2</sup>) for a duration of 1 minute  $\pm$  2 seconds.

**B-2.1.1** A bottle which withstands the pressure (see **B-2.1**) without bursting, shall be considered to have passed the test.

**EXPLANATORY NOTE**

This standard lays down the requirements for aerated water glass bottles of crown cork type. This standard was first issued in 1957 and was revised in 1974. The first revision of this specification was taken up to bring the standard in line with the then manufacturing practices and also thermal shock resistance test was included.

The present revision of this standard has been taken up to cater for the aerated water glass bottles of 500 ml as well as these bottles are in common use. Also certain dimensions of bottles have been included. The verticality test has also been included in the present revision. The dimensions pertaining to neck finishes have been deleted and the reference has been made to IS : 7511 ( Part 7 )-1986.

**AMENDMENT NO. 1   NOVEMBER 2005**  
**TO**  
**IS 1107 : 1986   SPECIFICATION FOR AERATED WATER**  
**GLASS BOTTLES CROWN FINISH TYPE**  
*( Second Revision )*

( Page 1, clause 8.6 ) — Substitute the following for the existing clause:

**“8.6 Limit of Alkalinity** — The glass of the bottles shall conform to Class HGB 3 of the glass when graded according to the method prescribed in IS 2303 (Part 1/ Sec 1) : 1994 ‘Grading glass for alkalinity : Part 1 Hydrolytic resistance, Section 1 Hydrolytic resistance of glass grains at 98°C — Method of test and classification (*first revision*).

**8.7 Bottle Washing**

All bottles shall be thoroughly cleaned immediately before filling by automatic/semi-automatic washing machines. Washing shall be accomplished by pre-rinse and final rinse. For final rinse dechlorinated potable water shall be used. Bottles should be thoroughly drained, sterilized and dried after final rinse so that strength and purity of content is not affected after filling. Water jets in the washing machine should be so designed and jet pressure so maintained as to thoroughly rinse the whole internal and external surface area of the bottles. Wash water in the bottle washer should be thoroughly drained and changed frequently to prevent algal growth.

**8.7.1** Wherever second hand bottles are being used, all the bottles should be pre-washed prior to feeding to the bottle washer. This should be done in the following manner:

- a) Pre-rinse first soaking in a tank to remove labels and other extraneous matter.
- b) Rinse in the second tank with hot water around 60°C and 3 percent caustic solution at 60°C using brushes to clean the interior and exterior of bottles thoroughly.
- c) Final rinse in the third tank with potable water.
- d) Feed the bottles to bottle washer.”



**Amend No. 1 to IS 1107 : 1986**

( *Page 3, clause 10.3* ) — Substitute the following for the existing clause:

**‘10.3 *BIS Certification Mark***

Each bottle may also be marked with the Standard Mark.

**10.3.1** The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.’

( CHD 10 )

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